# **Management Overview**

# November 2024



The Okinawa Electric Power Company, Inc.

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# **Overview of Okinawa Prefecture**



#### **Basic Data**

Population:	1,466,944	<
No. of Households	650,702	
Area	2,282 km²	
Climate	Subtropical / Oceanic	
Location	26°12N 127°41E	
Prefectural GDP	¥4,323billion	
Tourism Revenue	¥850.7billion	

- Many islands are dotted over a sea area lying about 1,000 kilometers east and west and about 400 kilometers north and south.
- ightarrow Okinawa has attracted attention for its advantages and potentials.
  - •Geographical characteristics as being located in the center of East Asia.
  - •The highest birth rate in Japan.
  - •Rich nature and mild climate.

 $\, 
ightarrow \,$  Making good use of such advantages and potentials, initiatives are underway

- Promotion of tourism.
- ·Clustering of international logistics industry.

Population, No. of Households as of September 1, 2024 Area as of July 1, 2024 Prefectural GDP as of Estimated results FY 2023

Tourism Revenue as of Estimated results FY 2023 (Source: Okinawa Prefecture, Geographical Survey Institute )

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# **Corporate Overview of OEPC**

- The Okinawa Electric Power Company (OEPC) supplies electricity to 38 inhabited islands including Okinawa main island.
- OEPC maintains 11 isolated systems that are not connected with the transmission lines of other power companies.
- OEPC has no nuclear and hydroelectric power plants and depends on fossil fuels for its power supply.

Established	May 15, 1072	Security code	9511
LSIADIISHEU	May 13, 1972	Service area	Okinawa Prefecture
Capital	¥7,586 million		Steam-power generators 5 locations 1,629 thousand kW (Oil 2 locations 375 thousand kW) (Coal 2 locations 752 thousand kW)
Total assets	¥458.330 billion (Non-consolidated) ¥498.671 billion (Consolidated)	Generating facilities	(LNG 1 locations 502 thousand kW) Gas turbine generators 5 locations 326 thousand kW Internal-combustion power generators
Employees	1,504 (Consolidated: 3,079)		13 locations 254 thousand kW Wind power generators 5 locations 2 thousand kW Total 2,211 thousand kW

(as of March 31, 2024)

#### Ratings

Rating agency	R&I	S&P	Moody's
Rating	AA	A+	A1

\* Ratings on long-term preferred debts as of October 31, 2024

## Semi-annual financial results(April – September)

(Unit: million yen, X)

	Consolidated (A)				٩	lon-consol		(A) / (B)		
	FY2023 2Q YTD (Results)	FY2024 2Q YTD (Results)	Change	Rate of Change	FY2023 2Q YTD (Results)	FY2024 2Q YTD (Results)	Change	Rate of Change	FY2023 2Q YTD (Results)	FY2024 2Q YTD (Results)
Sales	130,501	127,229	-3,271	-2.5%	125,604	122,356	-3,248	-2.6%	1.04	1.04
Operating income	4,704	7,284	+2,579	+54.8%	4,026	7,145	+3,118	+77.4%	1.17	1.02
Ordinary income	4,216	6,871	+2,654	+63.0%	3,814	7,103	+3,289	+86.2%	1.11	0.97
Net income	3,238	5,354	+2,116	+65.4%	3,106	5,702	+2,595	+83.6%	1.04	0.94

\* Net income attributable to owners of parent.

## Consolidated and Non-consolidated : Decrease in Sales, Increase in Income for the first time in 4 years

[Revenue]

Decrease in Fuel cost adjustment system due to lower fuel prices although increase in Electricity sales in Electric business.

[Expenditure]

■ Decrease in Fuel costs due to coal and LNG fuel price fall in Electric business.

# Annual Outlook Summary FY2024

									(Unit: m	illion yen, X
		Consolic	dated(A)			Non-conso	olidated(B)		(A) /	/ (B)
		FY2024 (Forecasts)				FY2024 (Forecasts)				
	FY2023 (Results)	Announced in Jul. 2024 (I)	Announced in oct. 2024 (II)	Change (II) - (I)	FY2023 (Results)	Announced in Jul. 2024 (I)	Announced in Oct. 2024 (II)	Change (II) - (I)	FY2023 (Results)	FY2024 (Forecasts)
Sales	236,394	232,200	233,600	+1,400	225,609	218,100	219,500	+1,400	1.05	1.06
Operating income	3,481	8,100	8,100	-	1,027	6,200	6,200	-	3.39	1.31
Ordinary income	2,568	6,800	6,800	-	387	5,000	5,000	-	6.63	1.36
Net income	2,391*	5,000*	5,000*	-	1,200	4,000	4,000	-	1.99	1.25

\* Net income attributable to owners of parent.

### Consolidated and Non-consolidated : Decrease in Sales, Increase in Income for the first time in 4 years

## [ Comparison with previous forecasts (Jul.2024) ]

[Revenue]

■ Increase in sales due to increase in electric energy demand in Electric business.

[Expenditure]

■ Increase in Purchased power costs due to increase in electric energy demand in Electric business.

# Electric Energy Demand (Results) (1/2)



#### Monthly Area demand at Transmission End (Preliminary report)

(Million kWh, %)

	Apr	May	Jun	Jul	Aug	Sep	1 <sup>st</sup> Half
FY2024	634	680	768	971	959	841	4,853
FY2023	573	636	760	903	838	840	4,550
Rate of Change	+10.7	+7.0	+1.0	+7.5	+14.4	+0.2	+6.7

#### Average temperature

							( )
	Apr	May	Jun	Jul	Aug	Sep	1 <sup>st</sup> Half
FY2024	23.9	24.7	26.9	30.5	30.2	28.8	27.5
FY2023	22.5	24.3	27.2	29.6	28.6	28.7	26.8
Climatological Normals	21.5	24.2	27.2	29.1	29.0	27.9	26.5

\* Climatological Normals is observed data from 1991 to 2020.

(Linit: million kM/h)

Electricity Sale	s Volume		(I Init: mi	llion k\//b %)
	FY2023 2Q YTD (Results)	FY2023 FY2024 2Q YTD 2Q YTD Results) (Results)		Rate of Change
Lighting	1,468	1,613	+145	+9.8
Power	2,275	2,387	+112	+4.9
Total	3,743	4,000	+257	+6.9

Power Generated and Received

		FY2023	2Q YTD	FY2024	2Q YTD				
		Electricity generated	Com- position ratio	Electricity generated	Com- position ratio	Change	Rate of change		
	Coal	1,460	36.1%	1,623	37.7%	+163	+11.2%		
С С	Oil	636	15.7%	484	11.2%	-152	-23.9%		
OEI	LNG	1,073	26.5%	1,075	25.0%	+2	+0.2%		
	Total	3,169	78.3%	3,182	73.9%	+13	+0.4%		
Oth	ner	877	21.7%	1,123	26.1%	+246	+28.1%		
	Total	4,046	100.0%	4,305	100.0%	+259	+6.4%		

<Lighting>

The demand for Lighting increased compared with Year-on-Year due to the higher temperature compared with previous year.

## <Power >

The demand for Power increased compared with Year-on-Year due to the higher temperature compared with previous year and due to increase in demand from the water industry.

# <Power Generated and Received>

- Power generated and received was 4,305 million kWh, up by 6.4%. \*
- Electricity generated of OEPC's Coal-fired thermal power was up by 11.2%. \*
- Electricity generated of OEPC's Oil-fired thermal power was down by 23.9%. \*
- Electricity generated of OEPC's LNG-fired thermal power was up by 0.2%. \*

\*Comparison with the same period of the previous year.

# Electricity sales volume (FY2024 Outlook)

	(Unit:million kWh, %							
	FY2023 Results	FY2024 Forecasts	YoY Rate of Change					
Lighting	2,714	2,871	5.8					
Power	4,251	4,334	2.0					
Total	6,965	7,206	3.5					

\*Total may not add up due to fraction processing.

# Electricity sales volume (Long-term Outlook)

	FY2012 Results	FY2022 Results	FY2033 Forecasts	2012-2022 Annual average growth rate	2022-2033 Annual average growth rate
Lighting	2,852	2,842	2,844	-0.0 (-0.3)	0.0(0.2)
Power	4,462	4,232	4,134	-0.5 (-0.7)	-0.2 (-0.1)
Total	7,314	7,073	6,978	-0.3 (-0.5)	-0.1 (0.0)

\* Adjusted for the influence of temperature.

### The demand for Electric Power in Okinawa area

				(Unit: million KVVn, %)
	Results		Forecasts	Average rate of Increase or decrease
	2012	2022	2033	2022-2033
Okinawa	7,330	7,788	8,108	+0.4
Japan	858,741	820,975	834,507	+0.1

(Unit:million kWh, %)

#### (Lighting)

Despite the impact of switching contracts to other business operators, it is expected to exceed the previous year's level due to the impact of high temperatures this summer and an increase in demand as a result of an increase in the number of households (Year on year growth rate: 5.8%)

#### (Power)

Despite the impact of switching contracts to other business operators, it is expected to exceed the previous year's level due to the impact of high temperatures this summer and an increase in demand as a result of the establishment of new commercial and accommodation facilities on the back of increased tourists (Year on year growth rate: 2.0%)

#### (Total)

As a result of the above, it is as a whole expected to be 7,206 million kWh, exceeding that of the previous year (year on year growth rate: 3.5%)

#### (Lighting)

Despite the impact of switching contracts to other business operators, it is expected to remain flat due to an increase in demand as a result of an increase in the number of households (Average annual growth rate after temperature adjustment: 0.2%)

#### (Power)

While the number of commercial and accommodation facilities is expected to increase due to an increase in the number of tourists, it is expected to remain flat due to the impact of switching contracts to other business operators

(Average annual growth rate after temperature adjustment: -0.1%)

#### (Total)

As explained above, the total electricity sales volume is expected to be 6,978 million kWh

(Annual average growth rate adjusted for temperature: 0.0%)

# **Capital Expenditures Plan**

- The Company has made it a plan to strive to reduce facility-related total costs and simultaneously, maintain and build appropriate and efficient facilities steadily, based on the premise that the stable supply of electricity is ensured.
- Capital investment in FY2023 was 35.6 billion yen due to an increase in the development of new power sources and measures to address the aging of power sources.
- Regarding supply facilities, it plans to make appropriate future capital investment to renew aging facilities and upgrade to the next-generation electric power networks.

Tren	Trends in the Capital Investment Amount (Unit: 100million yen)								
FY		2021		2022		2023		2024	
By fa	acilities	Results	(Plan)	Results	(Plan)	Results	(Plan)	(Plan)	
Powe	er sources	98	(125)	180	(195)	147	(187)	(146)	
ties	Transmission	47	(112)	81	(117)	76	( 91)	( 94)	
facili	Transformation	69	(74)	35	( 45)	37	(55)	(56)	
ply i	Distribution	66	(93)	54	( 84)	62	(78)	(101)	
Sup	Subtotal	183	(279)	171	(247)	177	(225)	(250)	
Othe	rs	25	( 34)	34	( 44)	31	( 33)	(15)	
	Total	307	(438)	386	(485)	356	(445)	(411)	

Note: The figures may not exactly match the figures because of rounding.

Note: The impact of the damage to the coal unloader at the Gushikawa Thermal Power Plant in FY2023 on the capital expenditures plan has not been factored in.

[Major Projects in Capital Investments in FY 2024]

#### **Power sources:**

Responding to aging of Gushikawa Thermal Power Plant Responding to aging of Kin Thermal Power Plant

Supply facilities: Responding to increasing demand

Responding to supply reliability

Replacement of aging facilities Responding to shortened power outage time

Item	Overview and Challenges
Sales	<ul> <li>The demand for Electric Power in Okinawa area will increase, but the rate of its increase has been slowing down.</li> <li>The number of tourists is recovering, and the number of households will continue increasing.</li> <li>The entry of power producer and supplier has advanced competition.</li> <li>Challenges will be sales expansion of electricity and gas.</li> </ul>
Profitability	<ul> <li>The excess upper limit of the fuel cost adjustment system was solved by the price revision in Electric business.</li> <li>A challenge will be to improve profitability.</li> </ul>
CF	<ul> <li>Capital investment will increase due to the implementation of the Mid-Term Management Plan.</li> <li>While there is no plan for large-scale power source development in the immediate future, investment in renewal of distribution facilities, etc. will continue.</li> </ul>
Capital composition	<ul> <li>Capital adequacy ratio significantly lower than previous levels due to significant losses in FY2022.</li> <li>A challenge will be to restore financial strength for the time being.</li> </ul>

# The OEPC Group Vision: Basic Management Stance

## What the OEPC Group Aims To Be

With our comprehensive energy business as the core, we aim to create new value through services to support both corporate and individual customers and as a business group with a sense of solidary, growing and developing hand-in-hand with the community, will contribute to the realization of a sustainable society.

Ba	asic Management Stance	
(1)	Strive to provide a stable supply of energy	(4) Fulfill social responsibility as a good corporate citizen of local communities
(2)	Aggressively take on carbon neutrality	(5) Nurture and value people
(3)	Meet the diverse needs of our customers and do our utmost to enhance customer satisfaction	(6) Achieve sustainable growth through proactive business development and continually enhancing management efficiency
		Challen ve to New Fields

## **Business Fields**

- With comprehensive energy business at its core, the OEPC Group will expand its business fields by further developing businesses in construction and real estate, information and communications, and support for lifestyles and businesses.
- We will also leverage the strengths of the OEPC Group to develop new businesses.



## Direction of Initiatives in the Medium-Term Management Plan: Direction of Initiatives to Realize What the OEPC Group Aims To Be

To realize what the OEPC Group aims to be, under the concept of "Okiden.COM," we will promote the "expansion of the topline," "proactive streamlining" and "challenge to become carbon neutral," to provide customers with energy and new extra value.



# **Management Goals**

- To realize what the OEPC Group aims to be, we will accelerate various initiatives based on the "OEPC Group Medium-Term Management Plan 2025" under our management philosophy this fiscal year, aiming for a V-shaped recovery in business performance, and steadily promote initiatives such as the promotion of human resource strategies and the challenge of becoming carbon neutral.
- The Company has set the period up to FY2025 as a recovery period during which it will focus on restoring its financial base and improving return on capital, aiming for an equity capital ratio of 25% or higher.
- We see this as a major growth opportunity for the Group to unite and become a strong corporate group by leveraging our collective strengths, and all employees will work together to achieve sustainable growth and increase our corporate value over the medium to long term.



## Analysis of the Current Situation toward Achieving Cost of Capital and Stock Price Conscious Management

- We formulated the "OEPC Group Medium-Term Management Plan 2025" in 2022, and have been working to provide new value in the form of energy plus α by expanding the top line, proactive streamlining, and taking on the challenge to becoming carbon neutral.
- Going forward, we believe it will be necessary to strengthen our initiatives to enhance capital efficiency, taking into account changes in the external environment and other factors.

# [OEPC PBR Trends]



#### [PBR Factor Analysis (OEPC's Current Level\*)]



#### Market capitalization/Net income

\* Stock price: as of September 30 of FY2024, Net income per share: FY2024 earnings forecast (based on July announcement), Net assets per share: as of the end of FY2023

# [PBR Factors (ROE (ROA), PER) Trends]





\*1 Net loss year is excluded from the calculation of the 10 company average. \*2 Since a net loss was recorded, the Company's figure for FY2022 is shown as zero.

# Examination of Management Methods to Improve Corporate Value

- Given Okinawa's growth potential, we believe that investment in existing and new businesses, including the electricity business to maintain a stable supply, will tend to expand in the future.
- In order to achieve sustainable growth for the entire Group, we will place greater emphasis on the perspective of capital efficiency and manage to increase corporate value (capital efficiency) while ensuring profitability that exceeds the cost of capital as a whole.
- In each business unit, we will establish business goals that contribute to the overall goals based on business characteristics and establish a system that allows for autonomous management.

## Examination of Management Methods to Improve Corporate Value (Capital Efficiency)



Execution of autonomous initiatives, etc.

## Establish overall goals and business objectives

• Establishment of business goals that contribute to overall goals, etc.

Corporate value enhancement Sustainable growth

## Evaluate corporate value enhancement potential

• Monitoring and management review, etc.

## **Improve initiatives**

• Cost reduction by strengthening procurement functions, etc.

- Our immediate policy is to continue our initiatives to improve capital efficiency and to increase profits in growth and group businesses based on our electric power business.
- Going forward, we will continue to pursue growth potential in each of our businesses and enhance shareholder returns and market dialogue through investor relations activities in order to increase corporate value and achieve sustainable growth.

Goal: Corporate value enhancement and sustainable growth					able growth	
			Issue ⇒ Dire	ction of response	Goals, KPIs, etc.	Major initiatives
Ancheciteante	uprovement	ROA improvement	0.9~2.0% (2013~2021) as trends	<ul> <li>Top line expansion</li> <li>Aggressive efficiency</li> <li>Improved return on capital</li> </ul>	<ul> <li>[FY2024]</li> <li>Establish management cycles to improve corporate value (capital efficiency).</li> <li>[FY2025]</li> <li>Consolidated ordinary income <ul> <li>12 billion yen or mod</li> </ul> </li> <li>Consolidated ROE: 5% or mod</li> </ul>	<ul> <li>Provide electricity plus α value (point services, CO<sub>2</sub>-free menus, etc.)</li> <li>Create new value ("karE-roof" × "All electrification" promotion, Mimamori service development, etc.)</li> <li>Cultivate demand along the gas line through the installation of gas pipelines</li> <li>Develop business at the Group level (proposals in line with customer needs for comprehensive energy services, energy conservation, etc., promotion of extraterritorial energy business, etc.)</li> <li>Expand top line by promoting CRE strategy</li> <li>Initiatives to expand fuel procurement sources</li> <li>Steady operation, implementation and establishment of VE proposal solicitation program</li> </ul>
1		base	Financial base damaged dueto large losses recorded Equity capital ratio 35.7%→23.4%	<ul><li>Recovery of financial base</li><li>Optimal capital structure</li></ul>	<ul> <li>[FY2025]</li> <li>Consolidated equity capital ratio: 25% or higher</li> </ul>	<ul> <li>Fuel and other inventory optimization</li> <li>Implement profit distribution that strikes a balance between recovery of financial base, investment, and shareholder returns</li> </ul>
	rovement	ation	No dividend for the first time since stock listing (FY2022) Developing a	<ul> <li>Stable and continuous shareholder returns</li> <li>Gaining confidence in future growth and profitability</li> </ul>	<ul> <li>Establishment of recovery period: The dividend level will be raised in stages, taking into account the balance with the recovery of the financial base.</li> <li>[FY2030]</li> </ul>	<ul> <li>Financial results briefing for institutional investors</li> <li>Individual dialogues on stewardship</li> <li>Company information sessions for individual investors</li> <li>Enhancement of various media and explanatory tools</li> </ul>
		valu	probable growth strategy that responds to changes in the environment	<ul> <li>Obtaining recognition for initiatives to achieve decarbonization</li> <li>Creating basic human resources, maximizing individual capabilities</li> </ul>	<ul> <li>CO<sub>2</sub> emissions reduction: -30% (rem P2005 level</li> <li>[FY2023-]</li> <li>Formulation of human resource strategy Set various KPIs with a target year</li> </ul>	<ul> <li>Accelerate initiatives based on Okinawa's future growth potential</li> <li>Promote roadmap to achieve net-zero CO2 emissions by 2050</li> <li>Initiatives for health and safety, health management, diversity, work style, human resource development 15</li> </ul>

# Long-Term Growth Potential of Okinawa

- Okinawa's geographical advantage of being located in the center of East Asia is attracting attention as a business base for capturing the huge markets of Asian countries.
- We aim to achieve sustainable growth and development of the OEPC Group along with economic growth that leverages Okinawa's strengths.

#### Strengths of Okinawa

#### Geographical advantage

# Okinawa is located in the center of East Asia



#### Urban development

Approximately 1,000 hectares of land south of Kadena Air Base is expected to be returned (about the same area as Tokyo's Chuo Ward).

# **GW2050 PROJECTS**

The projects aim to make integrated use of the former base return site and strengthen the functions of Naha Airport, and to develop Okinawa's economy as a **"Gateway Open to the World"** that will truly lead Japan.

Revitalization of the northern part of the main island (theme park opening in 2025) JUNGLIA: approx. 60 ha

(Tokyo Disneyland: 51ha)



## Sustainable growth and development of the OEPC Group

#### TT and innovation Dutside the region and overseas Towatche agowth agowt

### Tourism related

Number of incoming tourists at pre-COVID-19 pandemic level

Expected to recover to (10 million people/year).

• The number of accommodation guest rooms is now the largest ever.

(63,497 rooms in FY2023)

 Number of cruise ship calls at ports: Record **658 calls** expected (Year 2025)

Number of cruise ship calls at ports: **1.8 calls/day or more** 



Photo sources: Okinawa Times, Nihon Keizai Shimbun

# Establishment of "GW2050 PROJECTS Promotion Council"

- The "GW2050 PROJECTS Promotion Council" (hereinafter referred to as the "Promotion Council") was established under the leadership of the private sector in cooperation with various economic organizations and related local governments in the prefecture, with the aim of realizing the future vision of Naha Airport as an "Open Gateway to the World" through the integrated use of the former base return site and functional enhancement of the airport. (August 13, 2024)
- The Promotion Council will conduct research and study in order to strengthen Okinawa's international competitiveness and sustainable development by taking advantage of the potential for extensive, areal development from cleared land in the area scheduled for base return from Naha Airport to Futenma Air Base.



# Establishment of "GW2050 PROJECTS Promotion Council"

- In the research and study, Naha Airport, Naha Port Facilities, Makiminato Supply District, and the area surrounding Futenma Air Base are positioned as "Key value-creating sites," and the specific functions and roles of each base, as well as the development of infrastructure such as industry, transportation infrastructure, advanced human resource development, and carbon neutrality, will be combined to steadily advance urban development. By formulating an integrated growth strategy under the leadership of the private sector, the municipality and the private sector will work together to systematically promote urban development.
- The Promotion Council plans to draw up a grand design through two years of research and study, compile a growth strategy for the division of functions of the former base return site, and make major measures and proposals.



# Initiatives to Achieve Carbon Neutrality(1/5)



# " Just Transition in the Okinawa area " FY2030 ambitious target

- Toward zero emissions in 2050, we published "Just Transition in the Okinawa Area" in the 2022 Integrated Report as a unique path that will not have a significant impact on the local economy, taking into account the regional characteristics of the Okinawa area.
- The power source composition of the FY2030 government target of -46% includes renewable energy power sources and nuclear power, which are difficult to develop in the Okinawa area. Existing thermal power sources that can ensure reserve and inertia power are also necessary for a stable supply of electricity.
- In the Okinawa area, where zero-emission power sources are limited, the government's target is equivalent to -28% if we assume S+3E and replace it with applicable power sources. From there, we have gone even further and set an ambitious target of -30%\* for FY2030.

\* Since the previous goal set by the government compared to FY2013 was a 26% reduction (a 25.4% reduction from FY2005), with a goal compared to FY2005 also shown, we have set our goal to be a 26% reduction from FY2005, which is higher than the government's. As a measure against global warming, our company started co-firing biomass in the Gushikawa Thermal Power Plant in 2010, and introduced the Yoshinoura Thermal Power Plant (LNG) in 2012, which is the main pillar of the measures. Since believe that our efforts will be properly evaluated, we continue to use FY2005 as the base year.



Power	r Source Configura	tion under the Sixth	Applicable zero emission power sources			
	Basic Energ	gy Plan	Nationwide	Okinawa area		
Renewa	ble energy	Approx. 36-38%				
	Hydropower	Approx. 11%	0	×		
	Wind	Approx. 5%	0	×		
	Photovoltaic	Approx. 14-16%	0	0		
Geothermal		Approx. 1%	0	×		
	Biomass	Approx. 5%	0	0		
Nuclear	•	Approx. 20-22%	0	×		
Hydroge	en	Approv. 19/	0	0		
Ammon	ia	Approx. 1%	0	0		
Therma	l	Approx. 41%				
	LNG	Approx. 20%				
	Coal	Approx. 19%				
	Heavy oil	Approx. 2%				
Total		100%	Approx. 57-61%	Approx. 20-22%		



## Issues and the state of initiatives to achieve carbon neutrality

We are diligently taking various measures and initiatives, while there are issues specific to the Okinawa area due to structural disadvantages, and those to achieve "Mainstreaming of renewable energy" and "Reducing CO2 emissions from thermal power plants."

# Structural disadvantages in the Okinawa area

Geographical, topographical, and <u>demand</u> <u>scale constraints</u> compel reliance on fossil fuels

Reference Materials p.11

Reference Materials p.10

It is necessary to have <u>a high supply</u> <u>reserve capacity</u> because it is not connected to the mainland power system and is outside the framework of wide-area grid interconnection

Large area of ocean dotted with islands and <u>a</u>
 <u>large percentage of demand is from</u>
 <u>remote islands</u>

## Issues to achieve carbon neutrality

- Limited options for decarbonized power sources that can be introduced at the moment
- To achieve both stable supply and decarbonization with the resources of the Okinawa region alone, thermal power sources that can ensure supply, coordination, and inertia are also needed, requiring investment in decarbonizing more thermal power than on the mainland
- Decarbonization needs to be aimed for through a fair transition based on regional characteristics, as it is necessary to take into account economic feasibility to avoid significant impacts on the local economy (which has different time horizon from the mainland)

# Initiatives to Achieve Carbon Neutrality(3/6)



Since the base year of FY2005, we has reduced its emissions by 24% by FY2023 through the co-firing of prefectural biomass and the introduction of LNG-fired power plants, which is the pillar of its countermeasures.
 Aiming to achieve a reduction of 30% in FY2030 (compared to FY2005) announced as a goal based on the "Just Transition in the Okinawa Area," we will continue speeding up the initiatives for the various carbon neutral measures indicated in our roadmap.

#### Progress and outlook of major measures toward CO2 reduction targets

Energy-derived CO2 peak out



(For FY2023-2030 it is expected to remain flat.)





# Initiatives to Achieve Carbon Neutrality(5/6)





## Issues for "Make Renewable Energy as Main Power Source "

The area is a regular site of typhoons, and from the viewpoint of extreme wind speeds, there are issues for introducing new large wind turbines (500 kW or more)

Management
 Reference Materials p.14

- Offshore wind has economic and other issues compared to onshore wind, and environmental aspects such as the impact on coral reefs must also be considered
- Land is limited due to the narrow prefectural land area, and there are few suitable sites for mega solar power plants (sunlight hours are also short compared to the rest of the country)
- In the PV-TPO business (free PV + storage battery installation service), there are restrictions on installation conditions (roof shape, age of the building, etc.)
- Given that it is a small independent system, it is necessary to secure adjustment power against output fluctuations and to deal with inertia in the power system

# Progress in addressing issues

✓ Preparations are underway for a wind condition study to resolve issues related to the introduction of large wind turbines, and the feasibility of introducing wind power generation is under consideration.

In addition, interviews with manufacturers and experts are underway.

- ✓ The introduction to new installation locations such as floating solar as well as the expansion of renewable energy introduction through off-site PPA schemes are under consideration.
- ✓ PV-TPO business is being promoted. We will continue our efforts to promote electrification by combining "karE-roof" and "all electrification" for general housing.
- For businesses, moreover, there is a need for carport-type systems, etc. We will continue to consider adding lineups and develop services that customers can choose from.
- ✓ Makiminato gas engine is being operated as an adjusting power source.
- ✓ We will continue working on grid stabilization and aim to advance grid stabilization technology using storage batteries and other means.

# Initiatives to Achieve Carbon Neutrality(5/5)



	2	2030	$\geq$	2040 205	50
ts		• Expanded the use of clean fuels			
ng CO <sub>2</sub> ns from wer Plan		<ul> <li>Reducing CO2 with increased consumption of LNG</li> <li>Leveraging the mobility of LNG power sources to smooth fluctuations in renewable energy output</li> <li>Consideration of introducing <u>CO2-free fuels (hydrogen, ammonia, etc.)</u> and offset technologies</li> </ul>		Conversion to CO2-free fuels Introduction of CO2 offset technologies	
Siol		• Fade-out of the inefficient thermal power plants			
Redi emis Thermal		<ul> <li>Conversion of oil to LNG. Lower carbon emission through the use of Local Biomass in Coal-fired Power Plants</li> <li>Consideration of introducing cutting-edge technologies such as next-generation thermal power</li> </ul>		Introduction of next-generation power sources using CO2-free fuel conversion and CO2 offset technology in conjunction with the shutdown of existing machines	

# Issues for "Reducing CO2 emissions from Thermal Power Plants"

Difficulty in introducing high-efficiency SC and USC due to demand scale restrictions, etc.

Management Reference Materials p.12

- Indispensable as an adjusting power with the expanded introduction of renewable energy (Even at present, the Gushikawa coal-fired power plant stops operations about 250 times a year)
- At present, there are no institutional measures for investment recovery applicable to the Company (Difficult to utilize the "Long-Term Decarbonized Power Source Auction" and the "Price Differential Support and Base Development Support" related to hydrogen and ammonia)
- Use of hydrogen and ammonia is effective in reducing CO2 emissions from thermal power sources, but there is a high degree of uncertainty in terms of technology, price, and procurement in the future (Costs are higher in island regions, where economies of scale are difficult to exploit)

# Progress in addressing issues

- ✓ We will continue our efforts to expand the use of LNG, and to use and expand prefectural biomass co-firing for coal-fired power generation.
- ✓ To expand the use of biomass, the utilization of unused wood waste existing in the prefecture is under consideration.
- ✓ The hydrogen co-firing power generation validation tests is underway at the Yoshinoura Multi Gas Turbine Power Plant from March 2024.
- ✓ We will work diligently to establish the necessary technology for the transition to thermal zero emission and to achieve economic feasibility.
- Since policy and financial support is important, we will utilize subsidies and lobby the government and other entities.

# Initiatives to Achieve Carbon Neutrality: Examples of Initiatives



## Example: Construction of Makiminato Gas Engine Power Plant (Natural gas)

- The purpose of this plant is to enhance the reliability of supply by stabilizing the system, such as through frequency control and supply-demand balance adjustment, as an electric power reserve source. (February 2021: Construction work started; March 2024: Commercial operation started)
- The fuel in use will be natural gas, whose CO<sub>2</sub> emissions per unit calorific value is about 30% lower than petroleum and which does not generate sulfur oxides (SOx), either.
- In addition, by installing denitrification equipment, nitrogen oxide (NOx) emissions will be reduced, and radiators will be employed to cool the power generation equipment. With such measures, the plant will be an environmentally friendly power generation facility.

## [Overview of Power Plant]

Name	Makiminato Gas Engine Power Plant	
Location	Urasoe City, Okinawa Prefecture (In the compound of the Okinawa Makiminato Thermal Power Plant)	
Power generation capacity	45,000kW (7,500kW x 6 units)	
Fuel for electricity generation	Natural gas	
Fuel storage facility	2,000t (PC dike and outer tank integrated- type flat-bottom spherical-roofed cylindrical vertical storage tank)	Fuel tank
Commercial operation started	March.1,2024	



← Gas engine power facility



# Example: Implementation of validation tests of hydrogen co-firing power generation (FY2023 to FY2025)

- In March 2024, the Company started validation tests of hydrogen co-firing power generation at the Yoshinoura Multi Gas Turbine Power Plant (35,000 kW at rated output). A co-firing rate (by volume) of 30% hydrogen at rated output was achieved in the test conducted on March 14.
- The validation tests are one of the key measures that contribute to "the expansion of the use of clean energies" under the theme of "Reduce CO2 emissions from thermal power sources," a pillar of the roadmap formulated for the Company to realize CO2 emissions net zero by 2050. The Company will continue the validation toward the establishment of the technology for operating hydrogen co-firing power generation.
- The Company is determined to proactively contribute to building a hydrogen-based society by becoming the first mover in the utilization of hydrogen in the Okinawa area. In parallel, the Company will build a sustainable energy system and advance the efforts to balance between the stable supply of energy and countermeasures against global warming.
  - \* As an undertaking based on a public invitation by New Energy and Industrial Technology Development Organization (NEDO) of National Research and Development Agency, this validation tests are underway as part of the "Development of Hydrogen Co-firing Operation Technology of Electric Power Reserve Sources Using Actual Commercial Systems, and the Building of a Hydrogen Utilization Model in the Okinawa Area." (Project period: FY2023 to FY2025)

#### Outline of validation tests

- Modified the Yoshinoura Multi Gas Turbine Power Plant for hydrogen co-firing, and installed a hydrogen-receiving supply facility
- Supply hydrogen as the fuel from compressed gas trailers transported from outside the prefecture. (In the future, the Company is exploring the possibility to utilize unused by-product hydrogen from within Okinawa Prefecture.)
- Aim at establishing the hydrogen co-firing power operation technology of electric power reserve sources by conducting hydrogen co-firing tests in actual commercial systems



Initiatives to Achieve Carbon Neutrality: Examples of Initiatives



## **Example: Microgrid Demonstration Project in the Kurima Island Region**

- The project was approved by the Ministry of Economy, Trade and Industry (METI) for the "Regional Microgrid<sup>\*</sup> Development Project, " a subsidized project, a microgrid demonstration facility was constructed on Kurimajima and the demonstration project started in January 2022.
- In May 2022, for the first time in Japan, we separated the microgrid target area from the original power transmission and distribution network, and succeeded in supplying electricity using existing power distribution lines using only a combination of photovoltaic power generation installed on the customer side and our company's MG storage batteries.
- Since the start of the demonstration, we have conducted three operational drills to verify micro-grid operation technology using solar power generation and storage batteries as the main power sources. In the event of a power outage on Miyakojima in April 2024, the microgrid was put into operation to help shorten the outage time in the target area.
- We will continue to accumulate knowledge through operational training during typhoon power outages, etc., as well as through actual operation, and work to establish reliable microgrid operation technology.
- By establishing microgrid technology, we will consider expanding the technology to other remote islands in order to contribute to the realization of a sustainable society and strengthen decarbonization and electric power resilience, which are growing social needs.
  - \* A regional microgrid is a system that uses regional renewable energy in an area of a certain size.





## Example: Installation of storage batteries to supply Miyako No. 2 Power Plant

- Demand for electricity is increasing in the Miyakojima grid, but due to the increase in FIT and other interconnection, the peak demand for our power generation facilities is during the evening hours (18:00-22:00), so we will install storage batteries to ensure supply capacity during this time period.
- The storage batteries to be introduced this time will store electricity during the daytime from diesel generators and natural variable power sources such as solar power generation installed in each home, etc., and discharge it from the storage batteries when evening peaks occur.
- As a result of the storage of electricity from solar power generation, etc., the suppression of renewable energy output will be reduced, which is expected to contribute to the expansion of renewable energy introduction in Miyakojima City, which is designated as a leading decarbonization area by the Ministry of the Environment.



\*Partially processed from Google Map



Image of MG set

# Example: Introduction of MG sets in the Miyakojima grid

We will introduce motor-driven MG (motor-generator) sets that are not subject to operational lower-limit restrictions and reduce the number of DG (diesel generation equipment) units in operation, thereby further introducing renewable energy equipment and reducing the amount of renewable energy output control.
By doing them, we will contribute to the reduction of renewable energy output control in Miyakojima, expansion of renewable energy interconnection, and reduction of CO2 emissions (approx. 350 t-CO2/year), and will work toward the realization of carbon neutrality.

#### Image of the expansion of renewable energy introduction before and after the introduction of the MG set



<sup>\*</sup> Operating the MG set as a DG substitute will lower the lower limit of operation and reduce the amount of renewable energy output control.



# Example: Free installation service of photovoltaic generation and storage batteries (PV-TPO Business)

- Approximately 520 contracts (approximately 2,880 kW) have been concluded with general residences, of which about 460 contracts have started receiving the service (approximately 2,540 kW).
- The Company engages in offering a new type of electrification, combining "KarE-roof" and "All electrification." All-electrification residences account for about 70% of all contracts.
- We have entered into 40 commercial service contracts with total output of 3,143 kW. Of these, we have started operation for 25 contracts with output of 1,960 kW.



# Okinawa Churashima Foundation (operation

#### started in August 2024: Motobu Town)

- Solar power generation equipment: 105 kW
- Electricity supplied by solar: 43% of annual electricity consumption
- Estimated CO2 reduction: 116 tons/year (equivalent to 13,000 cedar trees)



# For businesses: Other achievements

Union Nakagusuku Store (July 2024)

Nago Municipal Nago Elementary School (July 2024)

Meio University Lifelong Learning Center (August 2024)

 $^{\ast}$  ( ) indicates the time of starting operation

# Human Resources Strategy (1/2)

- The Company strongly recognizes that the "safety" of all people involved in its business operations is its highest priority, and the Company ensures the physical and mental health of its employees by thoroughly ensuring safety and practicing "Health and Productivity Management."
- Based on the "Human Resources Strategy" formulated in November 2023 and for the purpose of reaching what the Company aims to be and contributing to the development of community with the eyes beyond it, the Company will make efforts that enable each member to willingly work toward "what they aspire to be" and demonstrate their capabilities to the maximum.
- Each employee never takes any easy task for granted in their daily duties. They, needless to say, complete their duties perfectly, and each department engages in their operations through communicating and coordinating with others.
- Human Resources Strategy
- The Company aims at maximizing employee and organizational strengths, centering on three directions (the environment, individual and organization).



# Human Resources Strategy KPI

	Indicators	Targets	FY2023 Results
Safety	Number of fatal industrial accidents	0 case	0 case
	Periodic health checkups rate	100%	100%
Health	People with exercise habits rate	Improvement	75.2%
Diversity	Ratio of female in management positions	<b>1.5x</b> compared to FY 2019 (by FY2025)	1.21x compared to FY 2019
	Male employees taking childcare leave rate	Improvement	85.5%
	Employment of people with disabilities	<b>2.7%</b> (by FY2025)	2.76% *1
Work style	Flextime system utilization rate	100%	93.0%
Personnel development	Introduction of online learning systems	FY2024	Scheduled to be introduced during FY2024
	Career recruitment in specific fields	FY2024	_
Recruitment	Percentage of female in technical recruits	20%	New employees in FY2024 <b>5.9%</b> (Estimated to be achieved in FY2025)

## Concept of investment

The basic mission of the OEPC Group is to provide stable energy to customers and contribute to the development of local communities and economies in Okinawa.

## Investment for stable power supply

With regard to facilities necessary for stable supply, we will steadily implement investments to maintain and build facilities appropriately and efficiently, while reducing the total cost of facilityrelated costs.

## Investment for carbon neutrality

In order to achieve carbon neutrality, we will promote realistic and effective investment in cooperation with the national government, prefectural governments and other businesses under policy and financial supports.

## Investment in growth sectors

In order to ensure the growth of the entire Group, we conduct appropriate risk management by means of a PDCA cycle based on a regular assessment of the quantity of risks involved, and then make investments for business development.

## Basic policy on shareholder return \*

For the distribution of profits, our company will maintain a "consolidated dividend on Equity ratio (DOE) of at least 2.0%" based on a "stable and continuous dividend" policy.

\*However, since the financial base has seriously deteriorated in the wake of the large deficit for FY2022, we have set the three years through FY2025 as a recovery period in which we will focus on restoring our financial base.

During the period, we will raise the dividend level in stages, aiming to return to the previous level after the end of the recovery period. The amount of dividends for each fiscal year will be determined in consideration of the balance between recovery of the damaged financial base and return to shareholders.

## [FY2024 Dividend]

For the interim dividend for FY2024, we decided to pay 10 yen per share. And we plan to pay a year-end dividend of 10 yen per share, the same as the interim dividend(annual dividend 20 yen/share).

	Div	n)	
	Interim	Year-end	Annual
FY2024	10	10(Forecast)	20 (Forecast)

# Initiatives by Business: Electric Power Business

## [Direction of Initiatives]

- Even in a competitive environment, the Group's fundamental mission of providing a stable supply of energy remains unchanged, and we will make every effort to realize it.
- We will strive to improve the profitability of our electric power business by thoroughly reducing costs and providing electric power with additional value, while reviewing our business model.
- We will develop the infrastructure to enable each electric power business to operate autonomously and flexibly.
- With the aim of achieving carbon neutrality by 2050, the Company will consider the adoption of innovative technologies and simultaneously, will be engaged in the two directions of "making renewable energy main energy sources" and "reducing CO<sub>2</sub> emissions from thermal power sources," and "promoting electrification."



# Initiatives by Business: Power Generation Business

# [Direction of Initiatives]

- Toward the stable supply of energy, the Company will formulate a future power source development plan and pursue the ideal way to build, operate, and maintain facilities of main equipment including outdoor facilities.
- While paying attention to the operational status of power generation facilities even under tight fuel supply situations, the Company will engage in the stable procurement of fuels by paying close attention to the moves of suppliers and the fuel inventory management, etc. including coal storage yards in neighboring countries.
- Toward carbon neutrality by 2050, the Company will engage in "reducing CO<sub>2</sub> emissions from thermal power sources."
- The Company will engage in continuous improvement efforts to reduce environmental load such as compliance with environmental laws and regulations and environmental preservation agreements and recycling of coal ash.
- The Company will engage in spreading the cooperative behavior-based safety culture that supports the fields, further enhancing field and organizational capabilities, and passing down technologies.
- The Company will strive to hold down the cost of electricity generation through measures including examination of the optimum power source composition, appropriate maintenance of facilities and the efficiency management of power generation facilities.
- Toward further the reduction and levelling of fuel procurement cost, the Company will look into and carry out all possible measures such as utilization of coal storage yards in neighboring countries, optimization of coal procurement by using carrying ships of various types and easing of price fluctuation risks.



The Company will proceed with the effort for the co-firing of hydrogen and ammonia, which are clean fuels, in connection with reduction of CO<sub>2</sub> emissions from thermal power sources.

In addition, the Company will work on biomass, which is a renewable energy, and LNG, which emits less CO<sub>2</sub>.

# Initiatives by Business: Transmission and Distribution Business

## [Direction of Initiatives]

- In the transmission and distribution sector, while ensuring the system that allows each department to execute organizing their work from planning, construction to maintenance and operation autonomously and flexibly, the function of organizing networks and management as a whole will be strengthened, whereby the sector will steadily advance the business plan, formulated to meet a new wheeling charge system (a revenue cap system).
- According to the 6th Strategic Energy Plan of the country, "It is important to make the shift to the next-generation network that drastically boosts resilience while responding to the massive adoption of renewable energy, etc." toward achieving carbon neutrality by 2050.
- Based on these, the Company will ensure an appropriate profit level while maintaining the stable supply of power, and make appropriate and efficient facility formation and capital investment for the future renewal of aging facilities and the shift of electricity networks to the next generation.
- The Company will engage in improving efficiency and profitability in a way to combine power facilities and digital transformation (DX).
- As an authorized general electricity transmission and distribution business operator, the Company will ensure the neutrality and reliability of the power transmission and distribution sector by responding to compliance with regulations and drastically strengthening internal controls, and strive to ensure the further implementation of compliance.
- Based on the human resources strategy, the Company will also engage in maximizing organizational and technological capabilities in the power transmission and distribution business.

<<Initiative for the Shift of Electricity Network to the Next Generation that the Company Aims at>>

#### Stable energy supply

- •Electricity transmission facilities that have been appropriately expanded and reinforced with an eye on future demand growth
- •Avoidance of system congestion through proactive expansion and reinforcement
- Promotion of the abolition of electric poles

•Avoidance of blackouts through system stabilization measures.

Strengthening of

resilience

- Enhancement of the supply reliability level by construction work that shortens the duration of an outage
- Preparation for disasters through microgrid verification
- tests.

#### **Energy platform**

- Expansion of the adoption of renewable energy through investigation and research on system stabilization
   Expansion of the introduction of distributed energy resources by upgrading electricity distribution networks
- Broadening of renewable energy interconnected systems in remote islands
  - Expansion of renewable energy (decarbonization).

- •Response to disasters and resolution of social issues by a faster provision of smart meter data.
- •Optimized renewal of aging facilities
- •Efficient business operation by utilizing digital devices.

## Transmission and Distribution Business (Examples of Initiatives: Efficiency and profitability by combining power facilities and DX)

- The Company aims to further improve efficiency by smartening operations and streamlining facilities through the introduction of DX.
- The Company aims to increase new revenues by leveraging its transmission and substation assets.

#### Smart with mobile devices

#### [Smart with adoption of mobile devices]

The use of mobile devices has made it possible to systemize the conventional paper-based recording of patrol inspections of substation facilities, thereby reducing the workload by assisting in the input of inspection results and speeding up the sharing of fault information.



#### Digital installation on 22 kV distribution towers

#### [Adoption of digital function-intensive equipment]

- > In the "flat-panel distribution tower," a centralized monitoring and protection control panel that applies international standards is used, significantly reducing the number of panel surfaces compared to the conventional system.
- Digital substations (distribution towers) are expected to reduce the size of buildings by streamlining equipment and improve maintainability through sensing of equipment, etc., and we will continue to work toward their adoption.

# Profit from utilization of power transmission and substation facilities

#### [Advertising business]

- Launched a service to install advertisements on buildings and outbuildings in power transmission and substation sites.
- Advertising media can be selected from a variety of media including wall advertising, freestanding billboards, and digital signage.



#### [Parking business]

Started "pay-by-the-hour parking service" on a trial basis, utilizing the site of a steel tower near the Okinawa Arena, in order to provide space for local residents when the tower is not in use for maintenance, etc.

#### Use of wearable cameras

#### [Wearable camera work support]

- Wearable cameras were introduced to provide remote work support and to share necessary information with the field.
- Support from the office based on video from the worker's perspective has been effective.



## Transmission and Distribution Business (Examples of Initiatives: Demonstration project using digital signage)

- With the aim of solving various social issues facing local communities, we will collaborate with local media and row stores along the street to promote tourism, create liveliness, improve the street environment, and strengthen disaster prevention functions (area management) through the continuous installation of digital signage on Kokusai-dori in Naha City.
- A total of 98 digital signage units installed along 1.6 km of Kokusai-dori in Naha City will broadcast public information in line with the objective of solving social issues, while maintaining and managing the media using revenue generated from commercial advertising.

#### [Project overview]

- \* Project name: Demonstration Project for Building Infrastructure for Okinawa Promotional Street Vision (applying Okinawa Promotion Specific Project Promotion Funds by the Cabinet Office)
- \* Objective: Tourism promotion Creation of liveliness Strengthening of disaster prevention functions • Improvement of the street environment
- \* Operator Okinawa Promotion Area Management Promotion Community
  - \* Three-party community

(Naha City Kokusai-dori Shopping Street Promotion Association Federation • Okinawa Electric Power Company • The Ryukyu Shimpo Co., Ltd.)

\* Information to be aired

Public information (Sightseeing/event information/disaster evacuation information/disaster prevention and evacuation/crime prevention/environmental beautification, etc.)

Commercial advertisements

(limited to those that do not offend public order and morals)

\* Start of operation: June 24, 2024

## Naha Kokusai-dori Street Vision



Advertising revenues are allocated to media maintenance and street environment improvement expenses.

# Initiatives by Business: Retail Business

## [Direction of Initiatives]

- Amid a rapidly changing competitive environment, the Company will strive to raise efficiency thoroughly to improve its bottom line. In order to continue to be a company that customers willingly choose, the Company will make efforts to provide value that exceeds expectations by enhancing the ability to empathize and to make proposals, and engage in sales expansion.
- The Company will strengthen and roll out the comprehensive energy services that are a strength of the Company.
- The Company strives to improve customer satisfaction by providing the value of electricity with something extra such as point-based services on membership portal "Okiden more-E."
- The Company will furnish a new electrification service that combines "KarE-roof" and "All electrification" whereby the Company will expand the topline and meet the challenge of carbon neutrality.
- The Company will work to ensure full compliance with relevant laws, regulations and guidelines, including response to conduct control.

#### [Comprehensive Energy Services of Okinawa Electric Power Company Group]



# Initiatives by Business: Group Businesses

## [Direction of Initiatives]

- In Group Businesses, the Company aims at sustainable growth in the following five business fields while boosting the potential of the Group. In addition, the Company will push forward with the initiatives of carbon neutrality (CN) and DX as important factors contributing to sustainable growth.
- In the fields related to Electric Power Business, the Company, as the core of Group Businesses that supports the stable supply in Electric Power Business, will engage in stable supply and efficiency improvement throughout the supply chain including group companies.
- 2 In the comprehensive energy field, the Company will proceed with the gas pipeline construction between Yoshinoura and Makiminato without fail and work to acquire new customers along the pipeline in addition to the ongoing gas supply business and the ESP business.
- ③ Outside the area, the Company will advance initiatives that leverage the expertise nurtured in the Electric Business, such as the introduction of renewable energy in small-scale systems.
- ④ In the construction and real estate fields, the Company will push forward with corporate real estate (CRE) strategy and actively get involved in the town-making field by taking the advantage of the strengths as a comprehensive energy business operator.
- (5) In the IT and innovation field, the Company will steadily move forward with the effort for early commercialization with an eye to rolling out the IT-based service of watching over people nationwide.



# Group Businesses (Examples of Initiatives: Development of Energy Services)

- Through Reliance Energy Okinawa, Inc., the Company runs the energy service business of owning energy facilities and processing and supplying energy. Currently, 13 customers are using the services.
   Additionally, the Company built an energy center inside the OEPC head office and has started supplying
- Additionally, the Company built an energy center inside the OEPC head once and has started supplying energy to its main building, off-premises commercial complex buildings, etc. Going forward, the Company will also roll out a broad-area energy service with that center as a model.

#### Increase in new energy demand

- Large-scale development of urban areas (e.g. former U.S. military bases)
- Construction of hotels in response to an increase in the number of tourists
- Construction of large-scale retail stores

Advancement and diversification of energy needs

- Reduce initial investment in energy use (e.g. electricity and gas)
- Reduce burdens involved in facility operation/maintenance and emergency response

#### [Energy service introduction results]

Urasoe General Hospital adopted the energy service in conjunction with the relocation to a new building and service started in December 2023.



Photo credit: Urasoe City Medical Association website



- · It owns energy facilities on behalf of customers.
- It provides electricity and gas in the forms of, for example, air-conditioning water (cold / hot), hot-water supply and steam.



# Group Businesses (Examples of Initiatives: Gas supply business)

Commenced gas supply business through subsidiary PEC in 2015.

The OEPC Group will further promote sales of LNG by supplying LNG based on LNG supply center, capturing demand along newly constructed gas pipelines, and collaborating with other energy companies.

#### **Pipeline supply**

Supplies gas to customers in the vicinity of the Yoshinoura thermal power plant through gas pipelines after vaporizing and odorizing liquefied natural gas (LNG).

#### Lorry supply

Supplies LNG by tank lorry to customers in areas where pipelines are difficult to be developed.



#### **LNG Supply Center**

At former U.S. military base site and industrial parks, PEC<sup>\*1</sup> constructs supply centers<sup>\*2</sup> and supplies gas through pipelines.



- \*1: Progressive Energy Corp.
- \*2: Awase Natural Gas Supply Center, Suzaki Natural Gas Supply Center and Makiminato Natural Gas Supply Center

#### **Principal customers**

Okinawa Gas Co. (Raw materials for city gas) TAKUNAN STEEL CO., LTD Okinawa Watakyu shingu Co. ORION BREWERIES,LTD Chubu Tokushukai Hospital Musashino Okinawa Hyatt Regency Seragaki Island, Okinawa ITO EN, LTD.

\*Customers to whom we supplied over 600t of gas in FY2023

# Group Businesses (Examples of Initiatives: Gas Pipelines business)

- Gas pipeline will be laid from the Yoshinoura Thermal Power Plant to the head office of the Okinawa Electric Power Company in Urasoe City through the Nishi-Futenma area, where heat demand is expected due to the development of the former military base sites. (In service from Feb 2024.)
- We will further promote the sale of natural gas in the central part of the main island of Okinawa.
- We will develop the pipeline network, and acquire demand in line with customer's change of fuels and urban development.
- We will also work with other energy companies to consider supply to ordinary households.

(about 14 km)



\* Base return source: Cabinet Office website, "Okinawa Promotion Council Chairman and Expert Committee Meeting (3rd meeting)" material

- OEPC established "SeED Okinawa LLC" jointly with five group companies to promote the development of energy business outside the region, by leveraging the knowledge and technologies cultivated with electric business such as the expansion of renewable energy introduction in remote islands, operation of grid stabilization devices, etc. (April 2021)
- As social demands for countermeasures against global warming increase further worldwide, we will contribute to the realization of a low-carbon society and sustainable society, by further spreading renewable energy in the island regions of Asia and the Pacific where we can leverage the strengths of our group.



## Group Businesses (Examples of Initiatives: Promotion of Business Overseas and Outside the Region)

Leveraging the technical capabilities and experience accumulated in the electric power business, the Group is united in its efforts to provide technical support and develop businesses related to the decarbonization of the energy sector in overseas island regions, particularly in Asia and the Pacific.



<u>Minamitorishima</u> (<u>Commissioned by Ministry of the</u> <u>Environment</u>) Reduce CO2 emissions and strengthen resilience by introducing solar power generation, storage batteries, etc. on both islands

Demonstration Project for Introduction of Renewable Energy on Iwojima and

Energy Transition PJ in the Oceania Region (wide-area) (JICA technical cooperation project)

Decarbonize the energy sector by strengthening capacity related to power source/grid planning and consumer-side measures to promote energy transitions

\*Targets are five countries in the red box.

Ecuador Galapagos Islands: Fossil Fuel Zero Roadmap Support PJ (JICA technical cooperation project)

PJ for Capacity Improvement of Power System Planning and Operation, Papua New Guinea (JICA technical cooperation project)

Technical support to local power companies for power system stabilization and problem solving

Group Businesses (Examples of Initiatives: Promotion of Business Overseas and Outside the Region)

## Example: PV-TPO Project in Republic of Palau

- OEPC Group and Tokyu Land Corporation Group will collaborate to introduce solar power generation and storage batteries in resort hotels in Palau, aiming to reduce CO2 emissions by reducing fuel-fired diesel generators owned by the hotels.
- This initiative will establish a model case of a sustainable renewable energy system in the island region, and contribute to the achievement of the carbon neutrality goals set by the countries of the Pacific region through horizontal deployment to the surrounding regions, including within the same country.



Palau Pacific Resort panoramic view



The signing ceremony for the basic agreement on this initiative held at Palau Pacific Resort (from left, Mr. Itami, Operating Officer and General Manager, Tokyu Land Corporation; Mr. Yokoda, CEO and President, SeED Okinawa; and Mr. Tsukahara, General Manager, Pacific Islands Development Corporation, a subsidiary of Tokyu Land Corporation that owns and operates the hotel)

#### Project overview

- [Target land] On the grounds of Palau Pacific Resort (a 172-room resort hotel, the largest in the country, owned and operated by the Tokyu Land Corporation Group)
- [Installed facilities] Solar power generation (DC 668 kW/AC 400 kW), storage battery facilities (output: 100 kW/ capacity 300 kWh)
- [Schedule (plan)] Commencement of operation in FY2025
- [Role] Okinawa Electric Power Company Group: Design, installation, and operation of solar power generation and storage battery facilities

Tokyu Land Corporation Group: Support for consultation and coordination with various entities in the country, and provision of locations for installation of solar power generation facilities

## Group Businesses (Examples of Initiatives: Development of Lifestyle and Business Support Businesses)

- We will develop our lifestyle support business, which utilizes cutting-edge technologies to realize a safe and secure society.
- ✓ Development of Mimamori (caring family monitor) Service
- Okiden CplusC Co. was established in 2021 to commercialize a "Mimamori (monitoring) service" that enabled to check the living conditions of families living far from home (e.g., the elderly) via smartphone applications.
- By utilizing WiFi sensing technology (AI analyzes the reflection of WiFi radio waves in the home to understand the movements of people in the space) in collaboration with a Singaporean startup company, nami, etc., it is possible to visualize the sleep and activity status of elderly people without using cameras, microphones, or wearable devices that may cause concerns about privacy and security.
- From FY2021 to FY2022, In light of the needs confirmed through the Demonstration Project for Establishing a System for Monitoring the Elderly Utilizing IT implemented in 12 municipalities, including Naha City, during FY2022, we are currently working to review the ideal way of monitoring ("Mimamori") in cooperation with local communities, system development, and test operation with local governments.
- In the future, the company will work to promote the spread of Mimamori services for the elderly from Okinawa to the rest of Japan, and will also consider new services in the fields of energy management, security, and disaster prevention.





▲ Sensor device WiFi sensor (left) WiDAR sensor (right)

# Group Business (Examples of Initiatives: Acceptance of Comprehensive Orders for Construction of Common Cable Tunnels, etc.)

- The OEPC Group will act on behalf of the road administrator as a "consulting service" for consultations with related parties that are troublesome to coordinate.
- The OEPC Group proposes smooth development of common cable tunnels, by accepting comprehensive orders in combination with the design and construction work.
- The Company's approach was introduced as a new method to shorten the construction period in a document of the Agency for Natural Resources and Energy and the Ministry of Land, Infrastructure, Transport and Tourism at expert meeting "Council on the Way the Promotion of the Removal of Utility Poles Should be."

# 2-4. Expansion of implementation of integrated design and construction

- In the system for common-use cable tunnels, each company used to contact and coordinate with road administrators from design to construction. However, through a new procedure in which <u>cable</u> <u>administrators act the contact with road administrators and all design work and construction are</u> <u>conducted in an integrated manner, the construction period has been shortened from about seven</u> <u>years to about four years</u> by preventing rework and improving construction efficiency.
- <u>TEPCO Power Grid extended this system to OEPD</u>. In addition to three case examples in <u>Toshima</u> Ward, Tokyo (Sugamo-Jizodori), Uruma City, Okinawa Prefecture (Prefectural Route 16), and Ginowan City (Nishi-Futenma residential area), new nine case examples including remote islands in Tokyo and Okinawa are underway.



#### <Implementation Status>

Company name	Location
TEPCO Power Grid	Toshima Ward, Tokyo (Sugamo Jizo-dori) (Construction completed)
Okinawa Electric Power Company (OEPC)	Uruma City, Okinawa Prefecture (Prefectural Route 16) (Constructio completed)
Okinawa Electric Power Company (OEPC)	Ginowan City, Okinawa Prefecture (Nishi-Futenma residential area) (under construction)
TEPCO Power Grid	Adachi Ward, Tokyo (Tokyo Women's Medical University) (Construction completed)
TEPCO Power Grid	Meguro Ward, Tokyo (Meguro Ginza Street) (under designing process)
TEPCO Power Grid	Niijima, Miyakejima, Hahajima, and Oshima in Tokyo (Construction partially completed)
TEPCO Power Grid	Toshima and Mikurajima in Tokyo (under construction)
Okinawa Electric Power Company (OEPC)	Naha City, Okinawa Prefecture (National Route 331) (under designin process)
Okinawa Electric Power Company (OEPC)	Okinawa City, Okinawa Prefecture (Prefectural Route 85) (under designing process)
Okinawa Electric Power Company (OEPC)	Ishigaki City, Okinawa Prefecture (The road along a former airport site) (Under planning)
Okinawa Electric Power Company (OEPC)	Miyakojima City, Okinawa Prefecture (Central vertical road) (under designing process)
Okinawa Electric Power Company (OEPC)	Izena Village, Okinawa Prefecture (Village road Haimi Road) (under designing process)

[Role of the OEPC Group]

Okinawa Electric Power
 Company (OEPC)
 Promotion of the removal of utility

poles

Group-wide support

- Okidenko
   Overall management of
   construction as the main contractor
- Okiden Kigyo
   Liaison with road administrators
   Consulting services
- Okinawa Enetech Design work

Document by Agency for Natural Resources and Energy (Council on the Way the Promotion of the Removal of Utility Poles Should be. February 28, 2024)

# **Characteristics of the Business Bases**

Demand for Energy	<ul> <li>Increasing demand for energy, supported by Okinawa's advantages and potential.</li> <li>As the proportion of energy for consumer use is high, effects of economic fluctuations are low for demand for Electric power.</li> <li>Potential demand due to large-scale urban development projects.</li> </ul>
Competition	<ul> <li>OEPC is outside the framework of wide-area power interchange because that is not connected with the transmission lines of other power companies.</li> <li>OEPC has voluntarily released power of 10,000kW supplied by J-Power.</li> <li>Competition is advancing due to the entry of energy suppliers.</li> <li>Biomass power plant by power producer and supplier has started operation.</li> </ul>
Power Generation Facilities	<ul> <li>A high reserve supply capacity is required since the systems of Okinawa area are small and independent.</li> <li>Reliant on fossil fuels due to difficulties to develop nuclear or hydraulic power generation.</li> <li>Coal-fired thermal power generation is indispensable not only for stable supply but also for maintaining electricity rates.</li> </ul>
Global warming Countermeasures	<ul> <li>Currently, possible measures are limited due to reasons including the region's geographic characteristics and constraints on the scale of demand.</li> <li>The introduction of renewable energies contributes to reducing fuel consumption and cost on remote islands, where fuel unit price is high.</li> <li>Since the systems of Okinawa area are small and independent, the limit of connection volume is likely to occur when using renewable energies.</li> </ul>
Remote Islands	<ul> <li>OEPC supplies power to 11 isolated systems including those in the main island.</li> <li>The region has a high cost structure because it has small islands and also because the scale of the economy is small. This leads to constant loss recording.</li> <li>Need to go carbon neutral in independent remote island grids.</li> <li>Through public-private collaboration, we will aim to realize sustainable regional development and local economic revitalization.</li> </ul>

Statements regarding future performance included in this document is based on calculations and predictions, and contain potential risks and uncertainties.

Please be aware that future results may change in accordance with changes in assumptions related to the management environment and the like.

[Enquiries regarding this document]

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